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WORK SKILL NEEDS FOR THE ECONOMIC DEVELOPMENT OF ARKANSAS, A REPORT.

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A GROWING POPULATION, MIGRATION FROM RURAL TO URBAN AREAS, AND AN EXPANDING MANUFACTURING INDUSTRY IS FORCING ARKANSAS TO REAPPRAISE ITS BASIC SKILLS OFFERINGS IN VOCATIONAL EDUCATION. SINCE ARKANSAS IS NOT IN A POSITION TO PROVIDE MASSIVE INCREASES IN SPENDING FOR VOCATIONAL EDUCATION, THE STATE MUST DECIDE IF IT IS DIRECTING ITS EXPENDITURES TO THE MOST URGENT NEEDS, THEREBY RAISING ITS AVERAGE INCOME TO THE POINT WHERE FUNDS ARE AVAILABLE TO PROVIDE AN ADEQUATE COMPREHENSIVE EDUCATIONAL PROGRAM. STATISTICAL PROJECTIONS OF POPULATION TRENDS AND EMPLOYMENT REQUIREMENTS STRESS THE INCREASING NEED FOR SKILLED LABOR. CONCLUSIONS EMPHASIZE THAT OFFICIALS IN ARKANSAS MUST RE-EXAMINE THEIR TRAINING EXPENDITURES TO ENSURE THAT MAXIMUM BENEFIT TO THE STATE IS REALIZED FROM PRESENTLY LIMITED FUNDS. (DK)

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WORK SKILL NEEDS FOR ARKANSAS

A Look Toward 1980

JUNE, 1967

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A REPORT

SKILL NEEDS FOR THE ECONOMIC DEVELOPMENT OF ARKANSAS

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SKILL NEEDS FOR THE ECONOMIC DEVELOPMENT OF ARKANSAS

INTRODUCTION

The State of Arkansas is engaged in an immense economic revolution, the outcomes of which will profoundly touch every city, town, and hamlet within its borders. This economic upheaval is much more basic and far-reaching than that represented by the normal yearly change associated with a modern technological society. The future of Arkansas, moreover, requires that it compress into the next decade the extent of economic changes equal to those recorded by others during a full century of the Industrial Revolution.

At the very core of Arkansas' economic upheaval are the vast changes which are rapidly transforming its agricultural foundation. From the time when Arkansas was first settled as part of the westward movement its people have largely worked the land. Unlike the Northern states, which even a hundred years ago were beginning to loosen their ties to an agrarian way of life, Arkansas has held steadfastly to an essentially cotton economy until but a scant few years ago.

For well over a hundred years a large proportion of each succeeding generation of Arkansas farm workers could look toward employment in the relatively uncomplicated pursuits of farm and rural life, the skills of which were for the most part learned by the simple expedient of small children observing their parents perform them in the fields. But within the last decade, farm machinery has become so accessible to all

operators and incorporates such an astonishing versatility that it has permanently displaced literally hundreds of thousands of agricultural workers. These people, of whom most have had little more than a basic education, are now cast into a labor market which not only places a premium on technical skills, but has only minimal needs for the untrained worker.

Arkansas must, therefore, fight its economic revolution on two major fronts. First, it must attract new base industries into which it can place the strong hands of its abundant labor force. Here it would go without saying that the industrial enterprises already established within the state must be extended every encouragement to develop, upgrade, and expand. Secondly, Arkansas must undertake relatively massive and certainly unrelenting steps to develop in its workers the technological skills without which these industries could not function. From the vantage point of today, work skill needs fall into two main categories: the immediate requirements, on the one hand, and on the other, the anticipated ones certain to emerge in the foreseeable future. The purpose of the pages that follow will be to assess the extent and the potential of these skill needs for the State of Arkansas.

<u>Background</u>: Early in March, 1967, at the call of Governor Rockefeller, a group of educational and economic leaders gathered in the state capitol and formed a task force to study the vocational training requirements of the State of Arkansas, as well as ramifications which emanate from those requirements. Led by Dr. John Peterson of the

Governor's office, representatives of the University of Arkansas - Industrial Research and Extension Center, Department of Education - Vocational Division, Arkansas Industrial Development Commission, Employment Security Division, State College of Arkansas, and the University of Arkansas Department of Vocational Teacher Education initiated the steps that would result in a fully current analysis of vocational training and work skill needs.

For the most part, studies available to the task force at its initial meeting proved to be less than fully satisfactory for one of two basic reasons. First, some had been undertaken from a perspective which was too limited to shed light on all segments of the problem as outlined by the Governor's far-reaching interests. The second shortcoming of available analyses could best be illustrated by their dates of publication. One piece of much quoted research had been completed in 1955, and, after twelve eventful years of economic and educational change, it clearly needed to be set aside in favor of a fresh analysis.

The 1955 Report: It was in 1955 that a General Assembly Committee on Vocational Education issued its report showing that there would be a need in the Arkansas labor market for far more beginning employees than were then being prepared by existing vocational training programs. This gap between anticipated needs and ongoing preparation was reported to be especially wide in the distributive occupations such as wholesaling and retailing. Other areas of marked disparity were seen to be in the construction

fields and the automotive trades. Relatively little attention was given, however, to the particular skills required in the manufacturing industries, rapidly growing nationally, which Arkansas could expect to attract with improved training programs. This was because the study of the Committee consisted primarily of two types of opinion surveys: First, what did existing employers think their needs for new trained workers were and, second, what types of training did high school students think they wanted. Then, on the basis of total employment trends and limited vocational training enrollments, the committee agreed that the demands for trained workers were so rapidly out-distancing the local school boards' limited resources for providing the necessary training that it recommended the construction of a number of state-operated vocational-technical schools.

In 1957, the General Assembly, responding to this committee's call, passed Act 328 which provided for the construction of ten State Vocational-Technical Schools to be administered by the Arkansas State Board of Vocational Education. These schools, the last of which is now nearing completion and is screening its first class, represent a major improvement in training capacity.

Yet, ironically, the gap originally existing between skill needs and the trained personnel required to fill them has actually widened since the emergence of these new training centers. In part this is a result of growth. Had they not been constructed, Arkansas could well be faced today with an even greater deficiency in trained workers.

Nevertheless, the growing gap is greatest in the manufacturing industries that are growing fastest and have the greatest need for trainable skills.

In retrospect, we need to ask whether the 1955 Report correctly assessed the real needs for training. Did the procedure of surveying existing employers about replacement needs and student opinions about job desires lead to recommending the kinds of training needed most by a rapidly industrializing state? Today we believe there are more reliable methods to assess the work skill needs of the manufacturing industries.

EMPLOYMENT PROJECTIONS BY INDUSTRY

Any analysis of the future work skill needs of a state must be based on both the numbers of persons actually employed at a given point in time and the recent trends in state and national employment.

In 1964, the Industrial Research and Extension Center compiled statistics on persons employed in Arkansas based upon 1960 Census data, and, together with annual figures for the period 1955 to 1963, forecast employment needs for 1980. Table I gives the most general kind of breakdown of this data. It shows with stark clarity the basic change in the employment picture of Arkansas anticipated for the next decade and a half. While in 1960 approximately 100,000 workers representing 17.7% of Arkansas' labor force worked in agricultural pursuits, by 1980 the number of farm workers will have dwindled to just under 66,000, representing only 8.1% of employed persons. This drop in agricultural employment is all the more significant when we realize that Arkansas anticipates by 1980 an approximate 25% increase in its overall population. By contrast with the above, non-agricultural employment, which in 1960 involved 450,000 workers or nearly 80% of Arkansas' work force, will vault to almost 713,000 employed persons representing just under 90% of all wage earners in the state.

The implications of these statistics are clear: (1) the workers leaving the farms, and (2) the others first entering the labor market must, in ever increasing numbers, seek their livelihoods in non-agricultural work. Examining more closely the industry

TABLE I

EMPLOYMENT BY MAJOR INDUSTRY GROUPS
ARKANSAS 1960 AND PROJECTED 1980

Major Industry Groups	Employment 1960	Employment 1980	Percent Distribution 1960	Percent Distribution 1980
1. Agriculture, forestry and fisheries	100,200	65,377	17.7	8.1
2. Manufacturing	113,513	224,775	20.1	27.7
3. Nonmanufacturing (non-agricultural)	351,778	521,525	62.2	64.2
Arkansas Total	565,491	811,677	100.0	100.0

breakdown of Arkansas employment, Table II deals only with the proportions of the labor force in different industries. This information, emerging out of the same study quoted above, indicates again that the major anticipated percentage increases from 1960 to 1980 will be in manufacturing pursuits. Percentage gains also will be experienced in finance and government.

This clearly suggests that manufacturing will be the dynamic growth sector and that most other non-agricultural industries will merely keep pace with any overall expansion made possible by manufacturing growth.

A still more detailed analysis of employment within the manufacturing industries is made possible by Table III. Study of this table shows that the two largest industries based on raw materials, the lumber and wood industry and the food products industry, will likely occupy a much smaller proportion of the work force in 1980 than was true of it in 1960. Certain other low-wage, low-skill industries -- apparel, furniture, miscellaneous, and rubber products -- will achieve modest gains. On the other hand, the electrical machinery industry will more than triple its proportion of workers by 1980. Other high-wage, high-skilled industries also will show important gains.

Another insight into the employment requirements of the immediate future is afforded by information compiled by the Arkansas Industrial Development Commission and summa-

TABLE II

EMPLOYMENT DIVERSIFICATION
ARKANSAS 1960 AND PROJECTED 1980

Industry	1960 Percent of Total Employment	1980 Percent of Total Employment	1960-1980 Changes in Percentages
Manufacturing	20.1	27.7	+ 7.6
Wholesale and retail trade	18.4	18.0	- 0.4
Agriculture, forestry and fisheries	17.7	8.1	- 9.6
Services	17.3	18.0	+ 0.7
Government	7.7	8.9	+ 1.2
Construction	6.4	5.5	- 0.9
Transportation, communication and public utilities	6.2	5.0	- 1.2
Finance, insurance and real estate	2.7	4.0	+ 1.3
Industry not reported	2.6	4.1	+ 1.5
Mining	0.9	0.7	- 0.2
Total	100.0	100.0	

TABLE III

DIVERSIFICATION OF MANUFACTURING EMPLOYMENT
ARKANSAS 1960 AND PROJECTED 1980

Industry	1960 Percent of Total Employment	1980 Percent of Total Employment	1960-1980 Changes in Percentages
Lumber and wood products (except furniture)	26.2	11.1	- 15.1
Food and kindred products	15.5	12.2	- 3.3
Apparel and finished products	7.3	9.8	+ 2.5
Paper and allied products	6.2	6.8	+ 0.6
Furniture and fixtures	5.8	7.3	+ 2.5
Printing, publishing and allied products	4.7	3.1	- 1.6
Chemicals and allied products	4.6	3.6	- 1.0
Leather and leather products	4.1	3.8	- 0.3
Electrical machinery	3.9	13.3	+ 10.6
Stone, clay, and glass products	3.5	2.8	- 1.3
Fabricated metal products	2.9	5.9	+ 3.0
Machinery (except electrical)	2.5	5.6	+ 3.1
Primary metal industries	2.2	1.1	- 1.1
Miscellaneous industries	2.2	4.8	+ 2.6
Transportation equipment	1.9	2.5	+ 0.6
Textile mill products	1.9	1.3	- 0.6
Instruments and related products	1.6	1.4	- 0.2
Products of petroleum and coal	1.4	1.1	- 0.3
Rubber products	1.2	2.5	+ 1.3
Other (including not specified)	0.4	---	- 0.4
Total	100.0	100.0	

rized in Table IV. Through its staff, the A.I.D.C. has currently established contact with a large number of industries of which forty are strongly contemplating locating in Arkansas. Table IV groups the different industries by their standard classification and offers an estimate of the number of new job stations which each would create within the next twelve months. While these figures deal only with new industrial prospects and should not be confused with jobs actually available, it is interesting to note that they are reasonably consistent with other projections made independently. Only the recent interest in textile products seems contrary to projected long run expectations. Not only are paper, apparel, and rubber products industries showing substantial interest in Arkansas, some of the higher-skills industries -- such as ordnance, primary metals and electrical machinery industries -- are among those most prominent among the new industry prospects.

TABLE IV

ARKANSAS INDUSTRIAL DEVELOPMENT COMMISSION
ACTIVE INDUSTRIAL PROSPECT LIST - 1967

Standard Industrial Classification	Jobs Planned By Prospective Plants
Ordnance and Accessories	1,000
Food and Kindred Products	300
Textile Mill Products	2,400
Apparel and Other Finished Products Made from Fabrics, and Similar Materials	1,050
Lumber and Wood Products (Except Furniture)	250
Paper and Allied Products	2,250
Rubber Products	1,375
Leather and Leather Products	350
Stone, Clay, and Glass Products	200
Primary Metal Industries	1,000
Fabricated Metal Products (Except Ordnance, Machinery, and Transportation Equipment)	30
Machinery (Except Electrical)	250
Electrical Machinery, Equipment and Supplies	1,350
Transportation Equipment	400
Professional, Scientific, and Controlling Instruments; Photographic and Optical Goods; Watches and Clocks	250
Miscellaneous Manufacturing Industries	230
Total	12,685

TOTAL SKILL PROJECTIONS FOR ARKANSAS

In the preceding section attention was focused upon scientific industrial expansions within the State of Arkansas which are likely to occur in the next twelve to fifteen years. While highly specialized industries typically place heavy demands for one or two special work skills, each may make limited requests for other marketable skills as well. Therefore, to gain a better perspective of the total array of work skills necessary to the projected growth of Arkansas, projection of overall skill patterns can be made.

In a study completed by the Industrial Research and Extension Center based upon projections by industry it was estimated that nearly 154,000 new jobs will develop in Arkansas by 1980. Table V summarizes this information by broad occupational groups. All groups, it will be seen, are expected to increase in number, with the exception of agriculture. The latter industry will lose more than 24,000 workers by 1980. About one-half of all new jobs will be in the broad classification of manufacturing.

This study, of course, assumes that by 1980, Arkansas actually will achieve an occupational distribution similar to that prevailing in general throughout the United States in 1960. Partial objective support for that assumption is gained from the observation that by 1966 some occupational patterns in Arkansas were already very similar to national distributions and other occupational areas were moving toward the U. S. norms.

TABLE V

PROJECTED SKILL NEEDS BY OCCUPATIONAL GROUP - 1980

Occupational Group	Additions by 1980
Total	153,740
Professional and Technical	31,040
Managerial	11,170
Clerical	51,489
Sales Workers	13,591
Craftsmen	23,499
Operatives	34,836
Laborers	5,284
Service Workers	6,761
Farmers & Farm Workers	-24,200

Achievement of these projections, however, may depend upon the development of the critical skills needed to warrant projected expansion of the key manufacturing growth industries.

While Table V indicates that approximately 31,000 new professional and technical positions will become available in Arkansas by 1980, all states and regions will be competing fiercely for persons with advanced training. Such people are especially crucial to industrial growth because each technical position very likely creates several others demanding a somewhat lower level of skill, though no less technically oriented.

The need for clerical workers appears to loom large in the projections included in Table V. This, of course, reflects a worker requirement which will cut across all industries; manufacturing is tending to hire a growing proportion of white collar workers and a declining proportion of factory workers. Clerical workers are becoming increasingly skilled and must demonstrate a high competency with a wide array of office machines. The picture of a willing, but untrained, 'pencil-pusher' is clearly vanishing from the modern, automated scene.

The need for craftsmen and operatives to assemble and run the manufacturing centers of 1980 also is strikingly high. Conversely, the need for common laborers and service workers is soberingly low. Here again the high premium placed upon established skills is clear. Manufacturing enterprises will tend to reserve their paychecks for the trained.

In a study prepared by the Reports and Analysis Section, Employment Security Division, the future numbers of specific occupational specialties was projected. This research summarized in Table VI, reflects both the anticipated gains and losses in Arkansas of selected work-skills by the year 1980. As the previous study reported, the clerical skills of stenographers, secretaries, and typists will be much in demand as will also be the talents of accountants, bookkeepers, and office machine operators. Carpenters and road machinery operators, however, will decline substantially; many other construction trades, craft skills, and repairmen will expand only slightly. Significant gains will occur in skill workers important to the higher wage manufacturing industries -- electricians, machinists, airplane mechanics, sheet metal workers, toolmakers, and welders.

These growing skills, which must be filled in the next twelve to fifteen years, form the logical targets for expansion in present and future vocational-technical training programs. In similar fashion, current training programs which are pointing people toward occupational areas experiencing declining demands from the labor market should be scrutinized with extreme care.

TABLE VI

SPECIFIC SKILL NEEDS BY SELECTED OCCUPATION - 1966 - 1980

		Change 1966 to 1980
Accountants and Auditors		+ 3,407
Technicians:	Medical and Dental	+ 549
	Electrical and Electronic	+ 1,045
Retail Trade Managers		- 16
Bookkeepers		+ 1,231
Office Machine Operators		+ 2,888
Secretaries		+ 8,634
Stenographers		+ 1,674
Typists		+ 4,594
Brickmasons, Stonemasons, and Tile Setters		+ 637
Cabinetmakers		+ 257
Carpenters		- 4,403
Compositors and Typesetters		+ 986
Electricians		+ 1,599
Excavating, Grading, and Road Machinery Operators		- 1,356
Machinists		+ 3,717
Mechanics and Repairmen:	Air Conditioning, Heating, and Refrigeration	+ 311
	Airplane	+ 1,157
	Automobile	- 505
	Radio and Television	+ 221
	All other mechanics and repair men	+ 3,706
Plumbers and Pipefitters		+ 962
Pressmen and Plate Printers printing		+ 528
Structural Metal Workers		+ 342
Tinsmiths, Coppersmiths, and Sheet Metal Workers		+ 1,037
Toolmakers, and Die Makers and Setters		+ 1,908
Chainmen, Rodmen, and Axmen, Surveying		- 84
Welders and Flame-Cutters		+ 2,030
Printing, Publishing, and Allied Industries		+ 809

THE IMMENSE TASK OF TOTAL TRAINING

Whether or not Arkansas ever becomes, as its slogan promises, a "Land of Opportunity," it most certainly is a land of many people. In the 1960 U. S. Census of Population, Arkansas had slightly fewer than 1,800,000 people within its borders. At the present time it is estimated that this number has risen very close to the two million mark. By 1980, a population approximating 2,500,000 is being projected. This last estimate suggests a 25% increase over Arkansas' present population in something less than thirteen years.

Table VII presents a detailed analysis of Arkansas' population by age groupings showing actual percentage distribution for 1960 together with projections for the year 1980. A very evident trend is the marked change in the age distribution of the population. In 1960, for example, the 'under age 40' group made up only 61.7% of the population, whereas in 1980 the same group will comprise 69.9% of the total of Arkansas' people. Therefore, not only will Arkansas increase its general population by 25%, but the most vigorous, the most trainable, and the most mobile portion of its citizenry will be relatively larger by nearly 10% in contrast to its 1960 population. During this same interval the 'over 65 age' group, while increasing in number as with all other age groupings, will make up almost the same proportions of the total population in 1980 as it did twenty years before in 1960. The 'under 20' group, which includes the school children, will be a larger proportion of the population in 1980. If enough

TABLE VII

PERCENTAGE DISTRIBUTION OF THE ARKANSAS LABOR FORCE BY AGE

Age Group	Percent of 1960 Labor Force (Actual)	Percent of 1980 Labor Force (Projected)
Under 20	7.6	9.1
20-34	29.0	41.6
35-49	33.6	26.0
50-64	24.3	18.4
65 and over	5.5	4.9
Total	100.0	100.0

jobs can be provided, Arkansas, more than ever, will become a youthful state; this, in turn, implies a great reservoir of able young people anxious to be gainfully employed in satisfying work. When one remembers that the twenty year old youth of 1980 is only seven years old today with virtually his entire educational experience still ahead of him, the potential for social good through properly training him for successful entry into the work-a-day world is immense.

The task of financing an adequate education and job training program for Arkansas youth also is immense. Arkansas still ranks among the very lowest of states in the amounts spent per child for education. As in 1955, Arkansas still lags also in the proportion of its educational expenditures going into vocational education. Yet, education absorbs a large share of total state and local government expenditures, and the education programs must compete for scarce dollars with programs of welfare, health, and other government services.

Clearly, Arkansas is not going to be able to lift itself up by its bootstraps through massive increases in spending on vocational education. There is the possibility, however, that Arkansas may spend its scarce dollars more advantageously.

The critical question becomes, therefore, not whether Arkansas is spending enough in total on vocational education, but whether it is directing its expenditures to the most urgent needs. What are the most urgent needs for training in a poor state which cannot provide all of its children enough education generally, as well as not enough voca-

tional education? The most urgent training needs, in this case, are those that will help the state to raise its household incomes, thus raising the tax revenues that would support better education and training.

DEVELOPMENT NEEDS FOR TRAINING

The goal of raising per capita income in the state is the ultimate goal of economic development. Expansion of jobs is the major means by which this goal can be accomplished. Obviously then, more and more low-wage jobs cannot enable Arkansas to catch up to the national average in incomes. Other alternatives are outmigration, birth control, and increased federal welfare subsidies. But these are not popular nor likely alternatives. Most Arkansans would like to help themselves by seeing more jobs created at better pay.

Jobs are provided by private investors and managers who see a profitable way to use physical resources and labor to provide goods and services that consumers want to buy. Generally, there are two kinds of employers: those who sell predominantly in regional, national, and international markets, and those who sell predominantly in their local community. Now, both types of employers provide jobs, but with the following important difference. The first group provides jobs producing exports that competitively justify the economic reason for the community's existence -- these are the "base" industries. The second group provides jobs that result from serving the population that comes to live in that community -- these are the "residentiary" industries.

The importance to economic development of this difference among employers is that programs to help both types of employers are not equally beneficial to the whole community. Aid to base industries helps them lower their costs, expand their sales in dis-

tant markets, and thus expand their jobs. This aid expands jobs and thus expands income for the community as a whole. The increased income results in more jobs for residentiary industries too. On the other hand, aid to residentiary industries lowers their costs and raises their profits without necessarily expanding sales; the same population cannot do much to expand its total sales to itself. The community as a whole, therefore, has no developmental interest in aiding residentiary industries. The first consideration in an economic development program is to selectively help the base industries in order to expand total jobs in the community.

Now, it should be noted that base industries can export farming, mining, and forestry products. They also can export specialized business services and recreation services. Anything that brings an expanded income flow into the community -- including more tourist dollars or more retirement dollars -- may be called a base industry. Yet, manufacturing has been, and will long continue to be, the major base industry with rapid growth and higher income opportunities for Arkansas.

The second consideration in an economic development program is to make the most of the area's best export opportunities -- those industries for which the area has a competitive advantage in national markets and those which are growing fastest nationally.

The base industry employer has to have comparatively low costs in order to sell at a profit in distant markets. The market demands for some types of products and services are expanding faster than others as the nation grows and prospers. So some base in-

dustries naturally will do better in a local area than others. It is only common sense to spend scarce development dollars to help those industries which can create the most new jobs.

It is for this reason that the preceding sections of this report concentrated on projections of trends. The recent employment trends by industry tend to reflect both the industries which are growing faster nationally and the industries for which the area has a comparative advantage.

Now, a third consideration in an economic development program is to avoid waste. Aid should not be given to employers unless it will make a difference in their investment and job expansion decisions. Some base industries, such as paper mills, will expand locally primarily because physical resources there are advantageous -- and in spite of local skill shortages. It would be wasteful to offer them training aid. It is not always possible to be sure whether the offer of specific aid actually makes the difference between specific employer's locating in or expanding in an area, but this consideration is important to development strategy in selecting what types of industries to aid.

What type of aid to offer a base industry is strategic. An industry that requires little skill and tends to be short of capital -- such as apparel industries -- may be interested primarily in capital subsidies and low wages. Highly capitalized industries with very few high-wage workers, on the other hand -- such as paper mills, petroleum

refining, and cement mills -- may be interested in taxes, transportation, resource supply or matters other than labor costs.

Training provided with public funds, therefore, becomes strategic to economic development when it is offered as an aid to industries which have important skilled labor requirements. These tend to be industries which have a large work force of semi-skilled machine operatives and quite a few highly skilled workers. Wage rates tend to be high because the skills are of a high level and the workers very productive; but the wage costs are an important part of the firm's competitive position.

It so happens that in Arkansas the types of industries projected to grow rapidly and to provide increased demands for skills are the same types for which skilled training can be influential in decisions to invest and expand in the state. These are the electrical equipment, machinery, fabricated metals, instrument, and transport equipment industries. These are the industries that require training in machine tools, welding, drafting, instrumentation, electricity, and electronics. These also are the industries which are hiring an increasing number of inspectors, technicians, and skilled office workers.

The economic development challenge that now faces Arkansas is not the same that was faced over two decades ago. After World War II the big task was to employ the large numbers of workers getting out of low income farming. Any sort of job in manufacturing, even at the lowest prevailing wage, was an economic step upward for workers who

had few local alternative job opportunities. In the past two decades, therefore, Arkansas expanded its manufacturing jobs faster than the national average and faster than the average for all southern states. It did this largely by acquiring a larger share of the nation's low-wage and slow-growth industries. However, in the decades ahead, the large numbers of new jobs in low-wage industries such as apparel plants will decline. These low-wage jobs in manufacturing cannot raise Arkansas' per capita incomes to the national average.

The challenge today is to expand the jobs of industries requiring more skilled workers. These industries are growing faster nationally and pay higher wages. Some progress has been made in demonstrating that such industries can locate and thrive in Arkansas. Training for Arkansas youth and adults in selected skills can play an important role in attracting more of these industries and encouraging them to expand faster. Training, thus, can be an important strategy of state economic development, if it is aimed at the right skills. Manufacturing skills, moreover, need not be the only kinds toward which training is directed in an economic development strategy. As noted earlier, any type of service which attracts larger income streams to the area may be a base industry. Some types of skill training that help to expand tourist industries, financial or business services, or regional medical and educational services, for example, may fit into an overall development strategy of training. The task of designing a training strategy, therefore, is to properly identify and emphasize those skill training needs that will enhance job expansion in base industries.

SUMMARY AND CONCLUSIONS

Summary: The information contained on the foregoing pages concerning industrial, employment, and work skill changes in the State of Arkansas, projected to the year 1980, may be summarized as follows:

1. *Arkansas has witnessed a massive loss of agricultural jobs for two decades and will continue to do so.*

2. *The employment of workers in Arkansas' industries is shifting not only away from agrarian pursuits but just as dramatically toward manufacturing enterprises and toward those with high skill requirements. This rapid shift necessitates a crash program aimed at converting persons with largely rural skills to workers having manufacturing and technical abilities.*

3. *The recently completed construction of a number of state area vocational-technical schools met an emerging need for additional technical training centers, but it is not clear that the type of training offered is meeting the most urgent needs.*

4. *In the next twelve to fifteen years, Arkansas will need a new distribution of work skills within its total labor force. Its loss of agricultural workers must be offset by large increases in clerical personnel, together with many additional craftsmen of various skills. A critical need will also develop for professional people*

who will design, direct, and manage a wide array of new base industries.

5. By 1980, Arkansas' population will increase by approximately half a million people. This number, representing a full 25 percent of Arkansas' present population, will form the pool from which the new workers may be drawn. This pool will be a young work force that can benefit from training in advanced skills. Yet, if sufficient jobs are not created, high outmigration rates will continue.

6. The strategy of economic development is to help industries selectively -- those that are base industries, those which are most likely to expand rapidly in the area, and those which can be most influenced to expand by a particular type of public aid.

7. Training can play an important role in an economic development program when directed at industries which have large labor costs and a concentration of semi-skilled and skilled jobs. These industries also tend to be the rapid growth and high wage industries.

Conclusion: The one inescapable conclusion which this brief analysis forces upon the authors is that public officials in Arkansas have a heavy responsibility to re-examine their expenditures on training to make sure that the maximum benefit to the state is realized from limited funds. To break out of the vicious cycle of poverty, too little training, and resulting low productivity, existing training expenditures must be directed more selectively to provide the types of skills that will help industries expand

jobs and income for all. An economic development strategy requires the direction of training toward the critical skills in rapidly growing base industries. A comprehensive review of existing training programs, therefore, is needed to implement this economic development strategy.

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